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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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THE REGISTER R.C.V.S.

The Register 1917 is now in course of issue—rather later than usual, owing in part to the considerable number of alterations principally due to army appointments and promotions: in part to difficulties in working under present conditions: and in part to inherent difficulties which can only be remedied when the finances of the College are on a better basis. It may be taken that the Register proper is corrected to the end of January, and the several lists of Officers A.V.C. given in Appendix IV to a week or two later, though at present these lists can be only approximately correct. The distinctions awarded, and promotions, have been carefully followed. It will be noticed that nine members A. V. C. are shown to have been awarded the Military Cross. There is also a short list of members serving in corps other than A. V. C.—Royal Artillery, Royal Engineers, Infantry, R. A. M. C. and Royal Flying Corps. Also lists are given of members serving in the Overseas Contingents. This section, which formerly filled four pages, now occupies ten.

The Register gives the names of 3401 members (nine of whom have since died), against 3409 in last issue, and 3425 in the one previous: with the same number (16) whose addresses are unknown to the Registrar (p. 320). The list of "Existing Practitioners" is reduced from 166 to 155, and this with the 8 less in the Register of Members shows a reduction of 19 on the two registers.

The Obituary list, which includes the names of 8 members whose death occurred whilst on active service, contains 71 names. The "Members Admitted" number 52, of whom one has since died, against 56 in last issue, and 83, which is about the normal, in 1915 It is certain that for some years to come this list will continue to show a further considerable decline.

THE SOUTH-WEST AFRICA CAMPAIGN.

We complete this week the concluding portion of Col. Irvine Smith's interesting and instructive Report on the work of the Veterinary Services in connection with the German South-West Africa campaign. Limitation of space and the introduction of more urgent matter has prevented a continuous appearance. The report contains items of interest to all concerned in controlling animal diseases; though the conditions are very different in a sparsely populated country, not burdened with the hide-bound institutions which make control in this country slow and difficult. It gives, too, a broad general idea of the Direction of such a campaign; and the appearance of general efficiency and co-operation in the work undertaken makes it pleasant reading.

GLANDERS.

Last week the Board of Agriculture completed the returns for the first three months of the year; and the figures of glanders are interesting. Only 8 outbreaks are recorded, as against 19 in the corresponding period last year, 7 in 1915, and 26 in 1914. It will be remembered that the total returns for 1915 exceeded the figures that had seemed likely in the early part of the year, and that the converse of this happened in 1916. In the latter year the figures were much higher for some months than those of 1915; but this was followed by so marked a lull that finally the 1916 total just fell below that of 1915. Considering the conditions of the last few months, the figures are highly encouraging.

The winter of 1916-17 has been the hardest we have had for a quarter of a century; and the debilitating effect of its exceptional severity might have been expected to develope a good many cases of latent glanders, assuming such to exist. Yet, throughout the period, the glanders returns have been unusually low. It is a fairly safe inference that there is now very little glanders indeed among horses in civil life; and we may fairly hope for a continuance of this state of things till the end of the war.

A great deal may depend upon the course taken when the army is demobilised. There must be some glanders among our army horses; and though we may be quite certain that it is held in check with mallein, and does not assume anything approaching the proportions it would have reached had a war of the same magnitude been waged thirty years ago, there is probably enough to cause a troublesome recrudescence in civil life. The same agent which is controlling the disease during the war might and should be used to reduce the spread of infection from the disbandment to a minimum. If the Government would order the malleinisation before sale of all horses sold upon disbandment, our campaign against glanders would be saved from a set back—perhaps a serious one. The measure would mean a comparatively small addition to the losses and expenses of the war; and it would save the nation a heavier loss. Without it, all we could do would be to advise owners to test all horses bought from the army; but, as the precaution would not be generally taken, the effects would not be so good.

AN INTERESTING CASE OF FRACTURE OF THE OS CORONÆ.

By Capt. J. F. D. Tutt, A.V.C. (T.F.)

Previous history. The horse, an officer's charger, had been previously lame after jumping in November, 1915, and was laid up for four weeks, was worked one day, and again went lame, and was then a given rest for about a week. He was then ridden by a light man in the troop and went sound.

Early in March, 1916, he was taken to King's Lynn by a Warrant Officer who was undergoing a three weeks course at the Riding School, and gave every satisfaction. This horse again went lame after jumping in December, 1916, and was laid up for about ten days.

Immediate history. On February 4th, 1917, whilst out exercising this horse shied at a searchlight and jumped sideways across the road, struck and fell over a grassy bank about two feet high, got up dead lame, and was left at a farm close by, he being unable to put his foot to the ground.

On February 18th this horse was sent into Mobile Veterinary Section Sick Lines, by the Veterinary Officer in charge of the unit.

Symptoms. The horse was unable to put the affected limb (near fore) to the ground, and the whole region from the coronet to the knee was very much swollen. On flexing the limb great pain was evinced, the animal rearing up.

Pending disposal to hospital, the whole region was bandaged, the bandages being soaked in a solution of Lotio alba three times a day. No crepitus could be heard; this was no doubt due primarily to the amount of swelling present, and secondly to the formation of connective tissue that took place, and which was found later, after destruction.

On February 26th the horse was able to go by rail, and we accordingly sent him with other cases to Tunbridge Wells Veterinary Hospital. Captain Bell, A.V.C. (T.F.), in charge of this hospital, has reported that he had to destroy the horse, and records that he found, on post-mortem:—

The Os coronæ in eight pieces, which were firmly held together by a mass of newly formed connective tissue.

He, also, noted that during life no crepitus could be heard.

Treatment of Respiratory Diseases by Intratracheal injections of Formalin.

Some time ago an extract appeared in *The Record* dealing with the treatment of respiratory diseases by the Intratracheal injection once or twice daily of 10 c.c. of a 4% solution of Formalin in distilled water. I have tried this treatment, injecting only once daily, and find it very beneficial in all cases of recent origin. The temperature usually drops after the first injection, and a normal temperature is reached after the fourth or fifth dose, when it may be discontinued; the animals usually make an uninterrupted recovery.

Appended are details of some cases treated as above:—

Case No.		Before injection.	1st day.	2nd day.	3rd day.	4th day.	5th day.	6th day.
1	Strangles	103.2°	103.6°	102.2°	103.4°	103°	103°	102.2°
		Has been in hospital three months; has a profuse muco-purulent nasal discharge and fistula of submaxillary glands. No improvement.						
2	Influenza and Pneumonia	104.4	103.6	103.2	104.2	102.6	100.6	100.6
		Discharged cured ten days after admittance to hospital.						
3	Influenza	105.8	105	101	103	102.4	101.4	104.6
		Died nine days after admittance. P.M.: Septic pleurisy, pneumonia.						
4	Influenza, great discharge from both nostrils	106	105	103.8	104.6	102.2	101	100.8
		Discharged cured twelve days after admittance.						
5	Pneumonia and Pleurisy	104.6	104	103	100.8	100.6	100	100.2
		Cured, slight nasal catarrh persists.						
6	Influenza	104	102.4	102.4	100.8	100.6	100.4	100.2
		Discharged cured ten days after admittance.						
7	Influenza	104	103.6	101.6	101.2	102	100.8	100.6
		Slight catarrh persists.						
8	Pneumonia	104.4	105.2	102.2	105	106	—	—
		Died. P.M.: Septic pleurisy and pneumonia.						
9	Influenza	104.6	103	102	101.8	99	99	100.2
		Discharged cured.						

Besides the cases enumerated I have treated 15 others, all of which were cured in ten to twenty days. I have only tried the treatment in one other case of old-standing respiratory disease and then with negative results. It is very unfavourable if the temperature does not drop before the fourth or fifth injection.

J. Fox, Capt. A.V.C.

ABSTRACTS FROM FOREIGN JOURNALS.

Torsion of the Uterus in a Bitch. Hysterectomy—Cure.

By Mons. R. Cholet, V. Surg. at Royan les Bains.

The subject of this note, an active bitch of the smooth haired variety, aged four years, was noticed by her owner, at the beginning of September, to be pregnant. He was not, however, aware of the date of conception. About the 13th Sept. the mammæ filled. On the 14th the subject showed at intervals acute pain, which continued until the 18th. The appetite was decreased: the vulva was not enlarged, nor was there a discharge from it. On the 19th the pains appeared to diminish; the appetite was somewhat improved; but the abdomen was ballooned and sensitive to the slightest pressure. The milk secretion disappeared.

On the 23rd Cholet first sees the bitch; he finds her very weak, the mucous membranes pale, and the abdomen very much enlarged and painful on manipulation, the left half is particularly distended. On vaginal exploration there is neither discharge, nor a fœtus presenting. A diagnosis of maternal dystokia with metro-peritonitis is made. Laparatomy is suggested and undertaken on the 24th, assisted by Mons. G. Bouchet. Anæsthesia is by means of atropo-morph. and chloroform; on account of the feeble condition of the patient an injection of 100 c.c. of physiological solution is made. Incision of six inches on the white line: on opening the abdomen there is an escape of sero-sanguineous fluid; there is a localised peritonitis; the omentum is strongly injected. The uterine horn which immediately presents itself is gravid, and partly gangrenous, and has formed adhesions with all the neighbouring organs, particularly with the bladder. An attempt is immediately made to disengage these adhesions; in doing so a finger punctures the horn, through this opening a fœtus and fœtal fluid is removed. This permits the operators to proceed with the disentanglement more easily, which done, the outline of the uterus can be better followed. The left horn is empty: the right encloses two fœti it has made a half turn on itself, taking with it by its weight the left in the movement. The body of the organ has also undergone a half twist on itself, and owing to the close adhesions which it had formed, it was impossible to disengage, and thus replace it in the normal position. Hysterectomy was performed. The abdomen was washed with normal saline solution: the abdomen sutured with silk, the skin with horse hair. The patient is very cold and pale, which is easily explainable by her previous condition, by the large surgical opening, and by the duration of the operation (time occupied not stated). She is placed in a box containing straw, with a hot-water bottle and copious covering. She comes round quickly: injection of 150 c.c. physiological serum with caffeine. On the following morning 100 c.c. physiological serum, and she gets some milk and shreds of meat. During the next few days her condition improves; the wound heals partly by first intention, partly by suppuration, because the patient tears off all the dressings. Fifteen days after the operation she is returned to her owner and has remained in good health since.

The author advocates the earliest surgical intervention in all such cases, and adds that such procedure does not carry with it more risk than waiting treatment, which is too often disastrous.—(*Recueil de Médecine Vétérinaire.*) L. J. K.

Saturnism due to a Leaden Projectile retained in the Tissues.

Lœper and Verpy have published an article upon this subject (*Mon. de la Farm. de la Terap*). Projectiles imbedded in the tissues are not usually extracted, except in cases in which their presence causes trouble. Nevertheless, it sometimes happens that these projectiles are not harmless. When they are of lead troubles due to saturnism may appear, after a slow absorption. Some patients who have been cured of wounds, but still bear the projectile in their tissues, suffer from anæmia, albuminuria, and intestinal or nervous disturbances; and, when urine is examined, it is found to contain lead.

The authors have observed that the lead reaction in the urine is more frequent in the case of shrapnel wounds than in those due to pieces of bullet, and is absent in the case of intact bullets. This is not surprising, as the German bullets are covered with a coating of a different metal.

The authors have made approximate quantitative analyses of the lead contained in samples of urine. The quantity appears in some cases to reach half a milligramme, or even a milligramme to the litre, or may be more than a milligramme in twenty-four hours. These figures show that, when a soldier retains a shrapnel ball in his tissues for a long time, the elimination of lead by the kidneys may be manifested by symptoms which are not insignificant.

The authors have observed that the absorption of lead in the organism of wounded men bearing projectiles depends upon two causes:—(1) the formation of soluble compounds, and (2) the passage of these compounds into the circulation. The first of these varies with the reaction of the tissues—albuminates, lactates, carbonates, and other salts, possessing different degrees of solubility, may be formed. The second cause varies with the circulatory activity of the tissues, the intensity of the leucocytary reaction, etc. The presence of lead in the urine is more frequent in the case of projectiles in the lung than in those in muscles or bones, and is more frequent in suppurating centres than in old sclerosed lesions. The more rapid attack of lead

by the tissues may be demonstrated when suppuration exists.

The authors have investigated various symptoms produced by leaden projectiles: these are vascular (especially arterial hypertension), renal (albuminuria), intestinal (obstruction and spasm of the intestine), and hæmatic (anæmia).

They conclude by observing that it is prudent to test the urine of wounded men bearing projectiles, especially if they present symptoms indicative of saturnism.—(*Revista de Veterinaria Militar*).

A case of Equine Sporotrichosis.

This case was recorded by J. Bridré, in *Le Recueil de Médecine Vétérinaire* of April 30, 1916; and is summarised in *The Tropical Veterinary Bulletin* of September, 1916, from which the following is abstracted. The subject was a French army horse imported from North America. Sporotrichosis of the horse was observed for the first time in 1909 in Madagascar by Carougeau, and has been found in America by various authors, but up to the present no cases have been reported as occurring in France,

The following were the lesions presented by Bridré's case:—"Excoriation of the left eyebrow; a circular ulcer with edges radially striated at the base of the left ear, and from this ulcer commences a cord-like beaded swelling, with hard and insensitive 'buds,' ending at the entrance to the chest; several buds opened with a scalpel disclosed a thick cream-like pus. The animal was placed in a box when these symptoms were first seen and tested with mallein, subcutaneously, but gave no reaction. On the following days the wounds on the eyebrow and at the base of the ear showed a tendency to cicatrisation."

Microscopic examination of fresh pus showed two oblong bodies only, bearing some resemblance to cryptococci, but not showing the characteristic refractile envelope of these parasites. The material was sown on to Sabouraud's agar immediately and kept at room temperature. After about 12 days numerous colonies of *Sporotrichum* appeared on the surface of the agar.

At first sight the characters of this organism did not appear to differ sensibly from those of *S. beurmanni*. A precise description is promised by the author's friend, Pinoy, who has commenced the study of the organism.

The above case was treated by intravenous injections of novarsenbenzol, with successful results.

The Etiology of Bovine Hæmaturia.

Hadwen has published, in *Le Recueil*, the result of experiments upon this subject. The presence of crystals of oxalate of calcium in the urine of hæmaturic cattle has already been reported by many observers, and Hadwen has seen it occur constantly. This suggested that the cause of bovine hæmaturia might depend upon the ingestion of plants containing oxalic acid; and Hadwen performed two series of experiments to test this hypothesis.

In the first series, emulsions of crystals of calcium oxalate were injected into the bladder. This produced irritation by its direct action, and culminated in the emission of sanguinolent urine—that is to say, it caused the development of a hæmorrhagic cystitis.

In the second series oxalic acid was administered by the mouth. The oxalic acid was toxic, and provoked albuminuria; and in some cases, besides the elimination of cells of the vesical epithelium, there was also hæmaturia. Crystals of calcium oxalate became numerous in the bladder.

These experiments demonstrate once more the harmful action of calcium oxalate upon the organism, and warrant the supposition that the ingestion of the plants containing oxalic acid causes lesions of the urinary apparatus which may lead to hæmaturia. In all the countries in which bovine hæmaturia has been seen, it appears to be a disease of poor regions, associated with scarce and bad forage, so that in these localities it is the common opinion that hæmaturia is due to an intoxication by plants in the food. The author's studies give an experimental confirmation to this hypothesis.—(*La Clinica Veterinaria*). W. R. C.

WESTERN COUNTIES V. M. A.

[National V.M.A.—Southern Branch.]

The 34th Annual General Meeting was held at the Royal Clarence Hotel, Exeter, on Friday 30th March, when the Chair was occupied by the President. Mr. Wm. Roach, of Exeter; other members attending included Messrs. P. G. Bond, Plymouth; J. Dunstan, Liskeard; R. E. L. Penhale, Torrington; Wm. Penhale, Holsworthy; E. J. Thorburn, Crewkerne.

The minutes of the last annual general meeting were read and confirmed.

Apologies for non-attendance were received from Messrs. W. H. Bloye, A. J. Down, and Percy Penhale.

New member. On the proposition of Mr. J. Dunstan, seconded by Mr. R. E. L. Penhale, Mr. Chas. Masson, of Torquay, was unanimously elected a member.

The Hon. Treasurer, Mr. Bond, presented the annual report and balance sheet, which was approved and adopted, on the motion of Mr. R. E. L. Penhale, seconded by Mr. Thorburn.

The question of the annual subscription was discussed and it was resolved that during the period of the war, the same be suspended. In order, however, to meet the various annual charges of the Association, all members in arrear are asked to remit to the Hon. Treasurer as early as possible.

The claims of the Royal College were strongly emphasised by Mr. Dunstan, who moved, "That in the opinion of this meeting it is the duty of every member of the Association to subscribe annually to the funds of the Royal College of Veterinary Surgeons." This was seconded by Mr. Bond, and unanimously agreed to.

Election of Officers.

President—Mr. Wm. Roach; *Vice-Presidents*—Messrs. A. J. Down, R. J. Collings, C. C. Parsons, and H. E. Whitemore; *Hon. Treasurer*—Mr. P. G. Bond; *Hon. Secretary*—Mr. Wm. Ascott—the retiring officers were re-elected on the motion of Mr. Wm. Penhale, seconded by Mr. Dunstan.

In view of the large percentage of members now serving with His Majesty's Forces and the increasing difficulties of travelling, it was resolved that, with the exception of the annual general meeting, all meetings be suspended for the time being.

Chas. E. Tucker, Secretary *pro. tem.*

VETERINARY SERVICES: GERMAN SOUTH-WEST AFRICA CAMPAIGN. REPORT BY COL. JAS. IRVINE SMITH, J.P., Dir. of Vety. Services. [Abridged.]

(Concluded from p. 377.)

At the hospital at Maitland there were 1,400 sick animals, all under satisfactory treatment with Capt. A. Goodall in charge. I also inspected the Malleining Section at the remount camp under Capt. W. H. Andrews. This section was testing 1,000 animals per week. Visited Groot Schuur and inspected the reaction to the mallein test on General Botha's charger "Charlie." Instructions were given for this horse to be kept isolated and re-tested in four weeks time, and also for a sample of blood to be taken and forwarded to the Government V. Laboratory for the agglutination test. Subsequently these re-tests confirmed the first, and post-mortem revealed glanders. On 9th Aug. inspected Ebenezer Road stables. These were converted into a quarantine depot for detention, examination and testing of all animals arriving from South-west Africa by boat. Capt. Joyce and section were in charge.

Having completed the necessary re-distribution arrangements, I sailed for Luderitzbucht: and on 12th Aug. inspected the remaining animals and gave instructions regarding their return to the Union, with all veterinary equipment. Also inspected various large stores of forage and grain of good quality amounting to some thousands of tons, at the supply depot.

On the 14th Aug. at Walvis Bay, I inspected the transport "British Prince" leaving for Capetown with 1,500 animals on board, Capt. J. Donaldson, V. O. in charge. Aug. 15th inspected the Base Veterinary Hospital at Walvis, Capt. A. M. Howie in charge, and the remount camp with some 700 mules. As the water supply had failed at Walvis, 350 animals were trekked to Swakopmund and a depot was temporarily reopened. I may record here that the information given to me then was that Walvis and Swakopmund were being closed down, and that all animals left behind by the "British Prince" were to go overland. Other arrangements were subsequently made, and about five more trips were made by animal transports. Inspected huge quantities of forage and grain at the supply depot amounting in all to about 15 000 tons, all of good quality.

Aug. 17th: The V. O. stationed at Usakos were Capt. J. Thompson and Capt. W. A. Dykins with V. Section "E"; Capt. F. M. Skues with V. Section "6" (b) was at Klein Aukas. The sick animals at Usakos were under satisfactory treatment, 15 w e isolated for skin disease. Orders were received that the "British Prince" would make more one trip, and 500 Burgher horses were despatched from Usakos to Walvis. Some of the animals arriving from up country were in fair condition, but the general complaint was that no regular supplies of forage were coming forward and animals were going back in condition. The majority were in an extremely emaciated condition. It may be mentioned here that all along the railway the various sidings were full of trainloads of forage unable to move owing to broken-down engines.

From Usakos I proceeded to Karibib, Okahandja, and thence to Windhuk, and on Aug. 21st I interviewed the Military Governor, and also the Assist. Q.M.G., and pointed out the serious condition of affairs and gave warning that in a very short time the mortality from starvation would be heavy, as animals were already losing condition rapidly in the various depots, many of them were dying from starvation, and that outbreaks of glanders and other diseases would follow unless the matter was at once remedied.

The Military Governor despatched wires to the Railway Board, the Director of Railways, and the Assistant Director of Military Railways requesting an immediate consultation. The A.Q.M.G. stated that he had made continuous representations to the Railway on these points.

Things went from bad to worse and the forecast was fulfilled. It was reported that on many occasions the Railway had promised to remove to the Union a specified number of animals daily. These were accordingly collected for removal, but owing to engine trouble the animals were again left to die of starvation and insufficient water supplies. It should be borne in mind that the whole population, military, civilian and native, was dependent on the railway for rations, and were entitled to first preference, this work in itself constituted a formidable task.

It was ultimately decided by the Remount Authorities in the Protectorate to trek the animals down to the forage lying at the coast, and large numbers were trekked to Swakopmund. Owing to their wretched condition, this move entailed a heavy mortality, and gave glanders a chance of taking hold. The V. Services strenuously and energetically tackled all forms of disease, and while working under grave disadvantages they succeeded in controlling and eradicating the outbreaks.

The mortality from starvation and diseases—glanders, etc., was approximately 6000 animals A total of 46,682 animals were tested and re-tested with mallein in South-West Africa, at 22 different centres, with the result that 3313 reactors and 840 clinical cases were destroyed, a large proportion of which were German horses. I may mention here that it was alleged in some quarters that the enemy subjects wilfully spread glanders amongst the animals.

The disease also broke out amongst the transport donkeys numbering 4000 odd, at two different centres, and about 106 were destroyed. Owing to the acute and rapid course of the disease in donkeys, the mallein t[illegible] was found to be most unreliable, so it was decided to distribute them in small lots over a large grazing area. This was effective, and the disease entirely disappeared.

It should be clearly borne in mind that the V. Services saved the situation under distinctly unfavourable conditions prevailing, and prevented the remaining 42,429 equines from being entirely wiped out. They eradicated contagious diseases and successfully and efficiently prevented their spread and introduction into the Union. They are deserving of the highest praise that can be bestowed upon them for having stuck to their work, and for having ultimately mastered the outbreaks and saved such a large percentage of animals under the most adverse conditions. To them is due the credit of minimising the financial losses, and for having done their utmost to prevent waste. Capt. Joyce at Swakopmund, Capt. Dunning at Windhuk, Capt. Andrews at Capetown, and Capt. G. McCall at Kimberley, rendered excellent service in combating glanders outbreaks.

On 22nd Aug., 1915, I had an interview at Windhuk with Lieut.-Col. Morkel, Special Remount Officer, and Major Lee, Asst. Dir. V. Services. Lieut.-Col. Morkel stated that he had been specially appointed to deal with the removal of all animals in the newly acquired territory, and that he had full powers to make the necessary arrangements for their disposal or return to the Union. Before commencing movements he was having a good look round, and did not wish any interference from outside sources. The matter was, therefore, left entirely in his hands. I asked Lieut.-Col. Morkel to communicate his arrangements to Major Lee, so that Veterinary Staffs would be detailed where necessary.

Major Lee was promoted Temp. Lieut.-Col. on Sept. 6th, 1915. He was instructed to proceed with the horse-sickness immunisation of all mules detailed for permanent duty in the captured territories. The necessary serum and virus were forwarded, and the work was in due course complete with satisfactory results.

I made an inspection of all veterinary stores, veterinary units and captured pedigree stock, including stallions, cattle, and Karakull sheep which were under the care of the S.A.V.C., pending handing over to the civil authorities.

It may be mentioned here that the members of the S.A. Veterinary Corps saved the Karakull sheep from slaughter for food purposes. Sergt. M. Goldberg of the S.A.V.C., took an active part, and later Major E. W. Hunt, of Hunt's Scouts, energetically took this work up and traced and recovered many of these sheep which had been distributed by the German Government over various farms. On 22nd August I visited the flock, which was then under the charge of Sergt. Goldberg at Govt. Farm, seven miles outside Windhuk. All records and pedigrees were being carefully preserved for handing over to the civil authorities.

I also made a minute and detailed inspection of the Gamams Veterinary Bacteriological Institute which was being carefully guarded for handing over to the civil authorities.

I had now completed the necessary V. arrangements for the occupied territories, and left Windhuk on the 23rd Aug., 1915. At Rehoboth, in the afternoon, inspected the V. details under Capt. G. Goodliffe. I instructed him to close down, forward his animals to Windhuk and proceed to Kums.

Aug. 24th I arrived at Gibeon, and next day at Keetmanshoop. Inspected the Remount Camp and Veterinary Units under Capt. Wadlow.

Aug. 26th. Inspected the Base V. Hosp. at Upington under Capt. D. B. J. McCall, and the malleining operations under Capt. J. McNeil; also the arrangements in force for the examination and testing of all animals entering the Union through this depot. 15,000 head of cattle were then under quarantine prior to entering the Union.

Aug. 27, arrived at Prieska, and from there returned to headquarters.

The Veterinary Units at the following depots were demobilised and closed down :—

Tweespruit Standerton	Remount Farms.	Parow Papkuil Farm Bushmansputs Kuruman Warrenton Fourteen Streams Kroonstad
Tempe De Aar Draghoender Border Potsdam Mellish's Farm		

The Base Veterinary Stores were transferred from Capetown to Johannesburg.

East African Campaign.

Animals were now being selected for service in German East Africa, and all mules for the Nyassaland Mountain Battery and for the S.A. Field Artillery were undergoing immunisation against horse-sickness by the S.A.V.C.

Instructions were received to form the following V. Units for service in East Africa :—

Two Base V. Hosp. and Stores; One Base V. Store; One Advance Base V. Hosp.; Three Mobile V. Sections; Officers and Details to supply four Mounted Units in the Field; Details for Ox Transport; V.O. and Details for S.A. Field Artillery; V.O. for Mountain Battery, Nyassaland.

The appointments and enlistments made were :—13 veterinary officers, 262 other ranks, 83 natives. All nominal rolls, attestation papers, stop orders, etc., were completed and forwarded to Record Office and paymaster.

In addition, 384 mules were immunised for units proceeding to East Africa, 11,000 doses of mallein, 2,100 doses of horse-sickness serum and virus, and 24 V. pack panniers complete with drugs and instruments were forwarded to Kilindini. All horses and mules forwarded were carefully examined and mallein-tested prior to departure from the various depots, and again at Durban, the port of embarkation. During the period covered by this report, the number tested was approximately 20,000 animals. All animal ships were provided with V. details and V. stores for the journey.

Depots were opened for the requirements of the East African Forces at Roberts Heights, Pretoria; Fort Napier, Maritzburg; Durban.

Jan. 12th: Attended a conference at Upington, *re* the closing down of all remount depots in the occupied territories, and the handing over to the civil authorities of a V. transport and remount establishment. Jan. 17th: Closed down the Base V. Hosp. at Upington, and proceeded to Capetown. Jan. 19th: Completed the arrangements for the closing down No. 5 Base V. Hosp., Capetown.

As a precautionary measure against the spread of skin disease, a dipping tank had been erected here, and the following dip was used :—Arsenite of soda (80%) 8 lb., soft soap 4 lb., paraffin 2 gall., water 400 gall.

Altogether 28,432 animals were dipped with only eight accidents. This had a very marked effect in improving the general condition of the animals, and in freeing them from lice, ticks and ringworm.

Capt. Goodall, V.O. in charge of No. 5 Base V. Hosp., adopted the following procedure in the administration of anæsthesia without casting: 1 oz. Chloral hydrate dissolved in 20 oz. sterilized water was introduced into the jugular vein by means of a transfusion apparatus; all septic precautions were taken. In the majority of cases this injection produced an immediate state of total anæsthesia lasting for several minutes, sufficiently long and deep to perform many operations without the administration of any other anæsthetic.

In the great majority of cases one intravenous injection of chloral and one dose of chloroform was found quite sufficient to keep the animal completely under for half-an-hour, but the susceptibility of different animals varied very considerably. If the animal showed signs of "coming round" during the operation, half-ounce doses were administered as required. Mules required more chloroform than horses.

Sand Colic was an extremely serious disease amongst the animals treated by this hospital. Large numbers returned from the captured territory, and frequently as much as a four gallon bucket full of sand was passed by horses. Capt. Goodall found that paraffin emulsion treatment proved very effective. The most suitable formula was 1 oz. soft soap, dissolved in 1 oz. water by heating, add 3 oz. paraffin. Give as a drench 5 oz. of this emulsion with 15 oz. of cold water on the first day, and 2½ oz. of the emulsion in water on each of the two following days. Pain is relieved by subcutaneous injection of Morphine hydrochlor.

Wounds and Injuries were very numerous, and this officer reported that Hypochlorous acid was the best general wound dressing. With the use of this agent new sound tissue grew from the bottom of the wound without the formation of proud flesh. He also found it very satisfactory for saddle and harness injuries. A metal syringe must not be used with this agent.

Intrapalpebral Mallein Test was introduced by Capt. Goodall, and he summarised the advantages as follows :—(*a*) It can be applied to a large number of animals quickly. (*b*) It can be applied to animals irrespective of high temperature, or in the presence of other disease. (*c*) Temperatures need not be taken to arrive at a diagnosis. (*d*) The test can be repeated within twenty-four hours if necessary on the other eye. (*e*) The reaction is more characteristic and delicate than

that obtained with the subcutaneous method. Nine thousand animals were tested by this method at Capetown, and 864 reactors destroyed. It is possible for a V.O. to do 1000 animals in a day; it can be repeated at any interval; the number of doubtful reactors is small. Full detailed reports relating to the technique, reactions, doubtful reactors, adaptability of the test, and statistics are filed.

As animals were passed through the final mallein test at Kimberley they were distributed throughout the country for the purpose of sale. In addition to the small animal losses sustained in this campaign, another notable feature was the success achieved by the S.A.V.C. in eradicating contagious animal diseases in the captured territories. Not only those referred to in this report, but cattle plagues, such as pleuro-pneumonia, anthrax, etc., amongst civilian and native stock. The veterinary organisation and procedure evolved successfully prevented the spread of any contagious disease to live stock in the Union. This work was duly acknowledged by the Civil Government Vet. Dept., and I may add that this forms an outstanding contrast to the history of other campaigns which have invariably spread contagious animal diseases in their trail.

I attach hereto a list of Veterinary Officers employed during the German South-West Africa campaign. The veterinary organisation created not only met all the veterinary requirements during hostilities, but, in addition, the Defence Force now possesses a Veterinary Corps with mobilisation stores, equipment, the most modern microscopical appliances, up-to-date surgical instruments, and a field V. laboratory, etc., complete, and ready for any future emergency. These are held for the following Units:—One Base Depot of Veterinary Stores; one Base Veterinary Hospital; twelve Mobile Veterinary Sections; and are intended to provide Veterinary Services for all the military districts in the Union of South Africa.

Weekly diaries, sick returns and detailed records from all V. Officers, for the period covered by this report, are filed at the S.A.V.C. Headquarters. Under cover of my Minutes dated July, 1915, I submitted for your favourable consideration the names of those Officers, N.C.Os. and men, who specially distinguished themselves during the period covered by this report.

Conditions having almost returned to normal I made application, 12th Feb., 1916, for permission to hand over to Major J. G. Bush. This was granted, and on the 1st March, I handed over the duties of Director of V. Services to that officer, who was promoted Temporary Lieut.-Col. from that date.

JAS. IRVINE SMITH, Col.

UNION DEFENCE FORCES.

Dir. Vety. Services: Lt.-Col. James Irvine Smith, J.P.

V. Hygiene & Sanitation Specialist: Lt.-Col. C. E. Gray.

Asst. D.V.S.: Lt.-Cols. J. G. Bush, G. W. Lee, Majors G. T. Cannon, B. Runciman.

Majors: S. T. Amos, J. B. Collyer, W. Jowett, C. M. Sharpe.

Capts.: W. H. Andrews, C. H. Brogan, M. Cunningham, J. W. Crowhurst, E. T. Clemow, F. J. Dunning, J. Donaldson, W. A. Dykins, S. Elley, J. Forrest, G. Goodliffe, A. Goodall, A. F. Harber, A. M. Howie, A. Hodder, J. F. Joyce, S. I. Johnston, E. Kellett, D. B. J. McCall, G. R. McCall, J. McNeil, J. G. McGregor, B. A. Myhill, W. McKie, J. K. Pilkington, J. Peddie, J. Quinlan, C. H. Strachan, F. M. Skues, E. E. Stokes, J. Thompson, P. R. Viljoen, C. H. Wadlow, J. A. Worsley (died on active serv.)

One Base Vety. Depot: one Base Vety. Store: 8 Base Vety. Hospitals: 15 Mobile Vety. Sections.

ARMY VETERINARY SERVICE.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, April 4.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lts. to be temp. Capts.:—S. T. Jackson (Jan. 7); H. V. Fenn (Mar. 1); J. R. Rigby (Mar. 2); P. J. Sheil (Mar. 16).

To be temp. Lieuts.:—J. E. Cockcroft (Mar. 20); L. S. Balls (Mar. 22); J. I. S. Moncrieff (Mar. 23).

April 11.

Temp. Lts. to be temp. Capts.:—R. S. Pethick (Feb. 21); J. Lawther (Feb. 23).

TERRITORIAL FORCE, ARMY VETERINARY CORPS.

April 4.

Capt. J. A. Dixon is granted the acting rank of Major whilst commanding a Vety. Hospital (Mar. 3).

The following casualties are reported:—

DIED—Pte. T. Bowran, 19526 (Castle Eden).

WOUNDED—Sergt. J. F. Pickering, S.E./9285 P.A. (Leighton Buzzard); Sgt. T. Bell, 5587 (Welford).

DROWNED—Sgt. R. H. Wood, 18729 (Bodenham).

The Future of Army Horse Supply.

A deputation from the Hunters' Improvement and National Light Horse Breeding Society waited upon the Earl of Derby not long since, at the War Office: he was accompanied by the President of the Board of Agriculture, and several questions on the subject of light horse breeding in the country were discussed.

Mr. Prothero said so far as the Board of Agriculture were concerned, they proposed to protect the farmer from unsound stallions, by compulsory annual registration of all stallions that were travelled for a service fee, or publicly exhibited for stud purposes. The Board next proposed to arrange for the inspection, by their own officers, of stallions recommended for the Board's premium. They would also be prepared, with sanction of the Treasury, to purchase a few stallions every year to supplement those provided by private enterprise.

Lord Derby stated that the War Office had bought in the United Kingdom during the war well over 400,000 horses, and the total amount paid for the animals was upwards of £20,000,000. The prices paid, he thought, were such as could be fairly said to be remunerative.

With regard to riding horses, as long as racing, hunting, and polo continued—and, speaking for himself (and he thought he could speak for the Army also)—he should view with the gravest concern anything which threatened permanently to interfere with any one of those three sports. He should always support all three, because he believed that they made in this country the industry of horse-breeding, which was a great one.

Upon the question of mares after the war, Lord Derby said they had under consideration a scheme by which it was hoped to take advantage of the opportunities which the conclusion of peace would present for aiding the light horse-breeding industry. This scheme contemplated a distribution to breeders on easy terms of surplus mares approved by the Board's inspectors.

"There is only one further thing," concluded Lord Derby, "that I think will appeal to all horse breeders, and that is, it never will pay you to breed inferior stock, whatever it is, whether it is for racing, whether it is for light draught horses, or whether it is for heavy draught horses—it is only the best that will ever pay, and it is only the best that we can ever encourage."

The use of Cavalry.

Mr. H. G. Wells recently prophesied the doom of the horse in warfare—"There is nothing which a horse can do which cannot be better done by motor traction." The earth has been afflicted with false prophets for at least a couple of thousand years, and the following sentences from a long letter by a man who saw our cavalry in action go to prove that they are still with us.

"I confess that after two and a half years of trench warfare, I was utterly sceptical of the value of mounted troops, in spite of the little affair south of High Wood, after we took the Bazentine and Longueval, in July of last year, when the Royal Dragoons and Deccan Horse rode out and brought back prisoners.

Conditions have changed since then. The country into which we have now gone is beyond the great wide belt of shell craters, which made the battlefields of the Somme a wild quagmire of deep pits and ponds. The roads between the ruined villages are wonderfully smooth and good where they have not been mined. Then there has been a glorious absence of great shell-fire while the enemy has been drawing back his guns to emplacements behind the Hindenberg lines. So the cavalry has had its chance again.

There have been no great sensational episodes, no shock of lance against lance in dense masses, no cutting up of rear-guards nor slashing into a routed army, but there has been a great deal of good scouting work during the past three weeks.

Eight villages have been taken by our mounted troops, and they have captured a number of prisoners and machine guns.

Night after night our cavalry have gone out in patrols, the leader ahead and alone; two men following; behind them a small body keeping in touch. They ride silently like shadows, with no clatter of stirrup or chink of bit. They find the gaps in the enemy's wire, creep close to his infantry outposts, ride deftly into the charred ruins of abandoned villages, and come back with their news of the enemy's whereabouts.

When the cavalry charged at Equancourt a body of British infantry, who had come on to the ground six hours earlier than they need have done, in order (as they said) not to miss the show, cheered them on with wild enthusiasm.

"Look at those beggars," shouted one man as the cavalry swept past, "that's the way to take a village. No blighted bombs for them, and hell for leather all the way!"—*The Daily Chronicle.*

The Shortage in the A. V. C.

The following paragraphs are from a letter to *The Brit: Med: Jnl:* and concern directly the medical profession, but the remarks agree so nearly with others which have reached us from some members of the A. V. C.—letters that we should like to print—that we reproduce them for the notice of our readers. A letter on "Doctors and Recruits," over the signature of Frederick Milner, which appeared in *The Times* of Tuesday, 10th inst., p. 8, may also be noted.

"I quite agree with "F. R. C. S. E." that there are more than enough men in the R.A.M.C. at present to do all the work that is needed if their services were properly organized; and I could give chapter and verse to prove this.

Personally I have now just completed my year, and if I had to do all the work I have done in that time again I could easily fit it into one month and have plenty of time for recreation or study. It can be no question of my having fallen on a "soft job," as I have done practically every sort of job in my time, both at home and in France, with the exception of work in a casualty clearing station, where I believe the medical officers are generally overworked. I must acknowledge that during my stay of two months in an advanced dressing station I had two days of very strenuous duty, but the work I did could have been done quite as efficiently by my student dresser or well-trained orderly.

I think before any scheme is started it would be well to make inquiries about the men already serving, as to their duties and the conditions under which they work. If, after this, a better organization were instituted, I believe the needs of the army could be easily met by the men already enrolled, and even a number could be sent back to their practices."—I am, etc.,

December 31st, 1916. M.Ch.

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscription for 1917:—

S. W. Pratt, Shanghai, China	£1 1 0
Previously acknowledged	494 9 0
	£495 10 0

OBITUARY.

C. T. Lang, M.R.C.V.S., Bridlington, Yorks.
Graduated, Edin: April, 1884.

Mr. Lang died on April 1st, aged 56.

William Sewell, F.R.C.V.S., 53 Elizabeth St., Eaton Square, London, S.W.
Graduated, Lond: April, 1870; F., Nov. 1885.

Death occurred on April 4th, at the age of 66.

Mr. E. J. H. Mettam, second son of the Principal of the Royal Veterinary College of Ireland, has obtained a commission and was posted to the King's Own Scottish Borderers Regiment some weeks back.

The Fourth National Congress of Medicine of Cuba will be held at Havana in the second fortnight of December, 1917, under the presidency of Dr. Aristides Agramonte. The work will be divided among eight sections: general medicine; general surgery; hygiene and demography; laboratory research; diseases of the eye, ear, nose, and larynx; pharmacy; odontology; and veterinary medicine.

An Algoid stage of Bacilli—a hypothesis.

The following suggestive letter appeared in *The British Medical Journal* of Jan. 27:—

Among the many unorthodox papers that recently have been shedding light on the obscurity of modern bacteriology there is none more notable than that of Professor Adami in *The British Medical Journal* of Oct. 14th, 1916. He accepts as fully demonstrated by Hort and Caulfeild that the cause of cerebro-spinal meningitis is not the meningococcus but an ultra microscopic organism that can pass through an ordinary bacterial filter. Moreover he claims that the instance of cerebro-spinal meningitis is by no means isolated; it is only one of a group of diseases the causation of which has been wrongly ascribed to specific bacteria which are found in frequent but not constant association with the disease, whereas the real cause is a filter-passing organism whose relation to the specific bacillus is at present undetermined. The group comprises the well-known

swine fever formerly ascribed to *Bacillus suipestifer* but now admitted to be due to a filter-passer, scarlet fever in man formerly assigned by some to a streptococcus, distemper in dogs, dengue (an addition to Adami's list), and the most alarming and revolutionary of all, enteric fever, still ascribed almost universally to the *Bacillus typhosus*. Even those who were not experts in bacteriology have been aware for some time that the relations of the typhoid bacillus to the other members of the *coli* group, a group universally present in the intestines of a normal healthy man, were in a state of chaos. But it will come as a shock to most to learn "that although a stock culture of *Bacillus typhosus* when killed will cause immunity, when living it will not cause the disease. At least, no one, so far, has been successful in reproducing the symptoms and specific lesions of enteric fever in man or in an animal by the employment of a stock culture of the typhoid bacillus."

In India the shock will perhaps not be so great, for we have been long familiar with Cunningham's demonstrations, frequently repeated on the Continent, that the swallowing of large doses of cholera culture almost invariably fails to produce cholera. With Cunningham's experiments the failure was invariable. When the man of ordinary accepted bacteriological tenets is confronted with the inclusion of enteric in the group caused by filter-passers, he will probably comfort himself by the reflection that, after all, even the heterodox admit that the *Bacillus typhosus* causes immunity; therefore it must be the cause of the disease, says orthodoxy. But his comfort rests on a very insecure basis, for there are many known instances of heterologous immunity, and that most amazing and unexplained result of the immense experiment in South Africa of immunization against pneumonia, an experiment that ran to hundreds of thousands. Immunity against pneumonia was indeed produced, but so was an almost equal immunity against other diseases.

The exact relation of the filterable virus to the associated bacillus is apparently still a matter of doubt. "Previous workers have at most suggested a symbiosis; that the one, the filterable virus, prepares the way for growth of the bacterial species. Hort suggests, and believes that he has evidence supporting the suggestion, that filterable virus and coccus are two phases in the life-history of one organism."

On analogy Hort's theory seems to be very probable, particularly if one recalls the sexual generation of the ordinary simple alga. The morphological difference between an alga thread and a bacillary thread is negligible except in scale. In both you have a chain of cells of similar structure with the main difference that the algal cells contain chlorophyll and the bacterial cells do not ordinarily. The sexual reproduction of the algal thread is that one cell of the thread becomes large and swollen, and breaks up into a large number of minute free swimming female gonads. Another sexual cell without preliminary swelling and enlargement develops and gives issue to smaller free swimming male elements. The two conjugate and the result is an ordinary algal thread reproducing itself by cellular division just as does the ordinary bacterial thread. Now imagine for a moment that in the bacterial thread a similar process takes place.

With most bacilli if the gonads, as regards size, bore the same relation to the bacterial cell as to the algal cell, the sexual elements would certainly be ultra-microscopic, and capable of passing through a filter. With regard to the probability of the sexual process setting free substances that would act as toxins or disease producers we have the analogy of the malarial organism. It is only when the free swimming elements are being set free in the blood that the fever paroxysm is produced.

I do not for a moment definitely assert that such a sexual process in bacilli as has been indicated does actually occur; I make it only a possibility requiring endless research before the point can finally be settled. Equally I do not assert that all disease is due to filterable organisms, and that bacilli may not be the actual instead of the associated cause in some disease conditions, such as gas gangrene, for instance, and ordinary sepsis.

But when one surveys the field of zymotic disease—mumps, measles, small-pox, chicken-pox, typhus, dengue, yellow fever, and the like—then we are at once confronted with the fact that all the efforts of the bacteriologists working for some forty years have been unable to establish that a single one of them is due to a specific bacillus. The presumption is inevitable that zymotic diseases are due to bacilli. On the other hand, it has been proved that many of the zymotic diseases of men and animals—for example, swine fever, dengue, typhus and yellow fever—are caused by filter-passers; therefore, the presumption is that all zymotic disease is due to filter-passers. These are mere hypotheses, which have to be tested. In other epidemic diseases—notably cholera and enteric—there is grave doubt as to whether the specific bacillus assigned to them is the real cause. It seems more probable that these also are due to filter-passers.

What still further complicates the question is that the relation of the bacillus to the filter-passer is still unsettled. There again at least three hypotheses are possible: First, that the relationship is purely accidental, owing to the universal presence in nature of bacilli. Secondly, that the relation between the bacillus and the filter-passer is merely one of high association—symbiosis. This possibility cannot be denied if we remember that certain orchid spores will germinate only in association with certain fungi. The third hypothesis I have already described at some length, that the relationship between the filter-passer and the bacillus is genetic, that the bacterial thread is merely an algoid stage, the sexual free swimming stage of which—namely, the filter-passer—is the real cause of disease. A fourth hypothesis I mention merely in order to discard it. From the minute quantities used, I refuse to believe it possible that the results ascribed to filter-passers are really due to associated bacterial toxins.

Which of all these hypotheses is most likely to prove correct I do not venture to predict, but personally I am in favour of the one that makes disease in general due to filter-passers.

It seems clear, as I have already suggested in a previous paper (*Indian Medical Gazette*, May, 1916), that the whole subject of modern bacteriology requires a systematic international overhaul.—I am, etc.,

Calcutta, Nov. 16, 1916. W. C. HOSSACK.

NOTE.—The title of my letter may suggest I am in sympathy with Dunbar's idea that bacilli are the products of algæ. In 1913, in his laboratory in Hamburg, he gave me a demonstration of his culture and an explanation of his views. Both demonstration and explanation struck me as unconvincing and left one crucial point unexplained—that is, how he originally obtained living sterile algæ.

Motor accident Claim Settled.

The following note appeared in the *Dumfries and Galloway Standard* several weeks ago:—"We are informed that Messrs. Henley & Co., London (through Mr. S. Copland, local secretary of the Ocean Accident and Guarantee Corporation, Ltd.), have privately settled the claim against them by Mr. John Baird, M.R.C.V.S., Castle Street, Dumfries, in connection with damage done to his motor car in December, 1914, through falling into an unprotected hole in Galloway Street, Maxwelltown."

The Royal Sanitary Institute,

90 Buckingham Palace Road, London, S.W.

Lecture to the Institute by M. S. Pembrey, M.A., M.D., Lecturer on Physiology, Guy's Hospital, on "The restricted supply of food; its relation to health and efficiency." On Wednesday, April 25th, at 5.30 p.m. General discussion invited. The Hon. Sir John A. Cockburn, K.C.M.G., M.D. (Vice-President), will take the Chair.

The Clydesdale Joint-ill Inquiry.

The first meeting of breeders and veterinary surgeons for the Glasgow district was held in the office of the society, 93 Hope Street, on Wednesday afternoon, 4th inst. Mr. James Kilpatrick, vice-president, presided over a good attendance. Prof. John R. McCall, who is convener of the Glasgow District Sub-Committee is on military service overseas. His place has been taken by Mr. T. B. Hamilton, M.R.C.V.S., 50 Princes Square, Strathbungo, who attended and gave a lucid account of what was required at the hands of both breeders and veterinary surgeons, and an interesting exchange of opinion took place. The enthusiasm of the professional men augurs well for the success of the initial steps.

At the meeting of the directors of the Highland and Agricultural Society on the same day, a communication was submitted from the Board of Agriculture, in reply to a suggestion by the directors that the present inquiry into joint-ill in foals might be widened to include similar diseases in calves and lambs. The Board's letter pointed out that the present investigation was being carried out by a Committee appointed by the Clydesdale Horse Society, who had voted £500 for the purpose. The investigation applied only to the Clydesdale breed. The proposal of the directors had a good deal to commend it, but if the other branches of the inquiry were to be undertaken additional expenditure would be required, and the Society might be willing to provide two sums of £500 for the purpose. If the Society could do this, the question of reconstituting the present Committee fell to be considered.

The Chairman observed that the idea of the directors was that this was a matter in which the Board might usefully concern itself.

It was agreed to remit to the Science Committee.

Treatment of Contagious Abortion in Lanark.

The Local Authority of the County of Lanark under the Diseases of Animals Act have, at the request of the Lanarkshire Farmers' Union, agreed to make available the services of Mr. Hugh Begg, F.R.C.V.S., the County Veterinary Inspector, for the purpose of the vaccination of herds. Farmers who are desirous of having their herds treated are accordingly requested to communicate with the County Veterinary Inspector, County Offices, Hamilton. The treatment will be carried out free of cost to farmers, but it is to be observed that it may not be possible to comply with every request owing to the pressure of other work falling upon the veterinary inspector, and also to the limited supply of vaccine that may be available.—*The Scottish Farmer.*

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks (a)	Animals.	Out-breaks (a)	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered. *
Gt. BRITAIN. Week ended April 7	10	11			1	5	40	87	5	60	32
Corresponding week in 1916 ...	13	15			1	1	53	107	4	86	235
Corresponding week in 1915 ...	12	19			2	3	68	143	2	57	222
Corresponding week in 1914 ...	22	23			2	2	38	52	4	74	853
Total for 14 weeks, 1917	190	222			9	19	1055	2238	327	613	228
Corresponding period in 1916 ...	181	216	1	24	20	59	1054	2581	153	1164	3611
Corresponding period in 1915 ...	220	247			9	14	68	143	136	1004	4190
Corresponding period in 1914 ...	265	284	11	74	28	72	983	1816	138	855	8131

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.
(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked :—Kent 4, Middlesex 1
Board of Agriculture and Fisheries, April 10, 1917. Excluding outbreaks in army horses.

IRELAND. Week ended **Mar. 31**	...	...	...	...	...	...	Outbreaks 2	12	3	23
Corresponding Week in 1916 ...	...	...	...	...	...	...	...	7	6	30
Corresponding Week in 1915 ...	...	...	...	...	...	...	2	17	6	33
Corresponding Week in 1914 ...	...	...	5	59	...	...	1	13	11	27
Total for 13 weeks, 1917 ...	2	2	...	...	1	1	15	166	58	367
Corresponding period in 1916 ...	1	5	...	...	...	...	22	172	59	291
Corresponding period in 1915 ...	1	1	...	...	...	...	13	175	65	407
Corresponding period in 1914 ...	...	...	52	708	...	...	29	288	61	317

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, April 2, 1917.
Note.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection